

PHOTONIC CRYSTAL LIGHT EMITTING DEVICE

ABSTRACT OF THE DISCLOSURE

A photonic crystal structure is formed in an n-type region of a III-nitride semiconductor structure including an active region sandwiched between an n-type region and a p-type region. A reflector is formed on a surface of the p-type region opposite the active region. In some embodiments, the growth substrate on which the n-type region, active region, and p-type region are grown is removed, in order to facilitate forming the photonic crystal in an n-type region of the device, and to facilitate forming the reflector on a surface of the p-type region underlying the photonic crystal. The photonic crystal and reflector form a resonant cavity, which may allow control of light emitted by the active region.